

**WHAT IS CLAIMED IS:**

1. A battery can for accommodating electrochemical materials therein, said battery can comprising:
  - an elongated and substantially cylindrical shell, said shell having a wall with a smooth outer surface, said wall having an inner surface; and
  - a plurality of lands and grooves formed on said inner surface of said wall, said lands and grooves defining a substantially uniform and continuously repeating pattern on said inner surface.
2. The battery can according to claim 1, wherein:
  - said lands and grooves extend longitudinally and for substantially an entire axial length of said battery can.
3. The battery can according to claim 1, wherein:
  - said substantially uniform and continuously repeating pattern on said inner wall is a sinusoidal pattern in cross-section.
4. The battery can according to claim 1, wherein:
  - said substantially uniform and continuously repeating pattern is one of a rectangular, a trapezoidal and a v-shaped pattern in cross-section.
5. The battery can according to claim 1, wherein:
  - said grooves extend into said wall by an amount approximately equal to 25% of a cross-sectional thickness of said wall.
6. The battery can according to claim 1, wherein:
  - no portion of an axial length of said shell is below approximately 0.004 inches in cross-sectional thickness.
7. The battery can according to claim 3, wherein:
  - a minimum radii of said lands of said sinusoidal pattern is

approximately equal to 0.005 inches.

8. The battery can according to claim 1, wherein:
  - said battery can is a AA-sized battery can; and
  - approximately 100 to 150 of said grooves are defined on said inner surface.
9. The battery can according to claim 1, wherein:
  - said battery can is a AA-sized battery can; and
  - approximately 120 of said grooves are defined on said inner surface.
10. A method of forming a battery can with lands and grooves on an inner surface area thereof, said method comprising the steps of:
  - providing a metallic disk;
  - drawing said disk into a substantially cylindrical can workpiece;
  - repeatedly drawing said can workpiece until said can workpiece has a predetermined diameter; and
  - utilizing a shaped punch and an ironing die to define said lands and grooves in said inner surface area of said battery can.
11. The method of forming a battery can according to claim 10, said method further comprising the steps of:
  - utilizing said shaped punch and an ironing die to produce said lands and grooves having a substantially uniform and continuously repeating pattern.
12. The method of forming a battery can according to claim 10, said method further comprising the steps of:
  - producing said lands and grooves so that they extend longitudinally and for substantially an entire axial length of said battery can.

13. The method of forming a battery can according to claim 10, said method further comprising the steps of:

utilizing said shaped punch and ironing die to define said lands and grooves having a substantially uniform and continuously repeating sinusoidal pattern in cross-section.

14. The method of forming a battery can according to claim 10, said method further comprising the steps of:

utilizing said shaped punch and ironing die to define said lands and grooves having one of a rectangular, a trapezoidal and a v-shaped pattern in cross-section.

15. The method of forming a battery can according to claim 10, said method further comprising the steps of:

extending said lands and grooves into said housing by an amount approximately equal to 25% of a cross-sectional thickness of said housing.

16. The method of forming a battery can according to claim 10, said method further comprising the steps of:

ensuring that no portion of said housing is below approximately 0.004 inches in cross-sectional thickness.

17. The method of forming a battery can according to claim 13, said method further comprising the steps of:

ensuring that a minimum radii of said lands of said sinusoidal pattern is approximately equal to 0.005 inches.

18. The method of forming a battery can according to claim 10, said method further comprising the steps of:

sizing said battery can to be a AA-sized battery can; and defining approximately 100 to 150 of said grooves on said inner

surface area.

19. The method of forming a battery can according to claim 10, said method further comprising the steps of:

sizing said battery can to be a AA-sized battery can; and  
defining approximately 120 of said grooves on said inner surface area.

20. The method of forming a battery can according to claim 10, said method further comprising the steps of:

ironing said lands approximately 20%; and  
ironing said grooves approximately 40%.

21. A battery can for accommodating electrochemical materials therein, said battery can comprising:

an elongated and substantially prismatic shell, said shell having a wall with a smooth outer surface, said wall having an inner surface; and  
a plurality of lands and grooves formed on said inner surface of said wall, said lands and grooves defining a substantially uniform and continuously repeating pattern on said inner surface.

22. The battery can according to claim 21, wherein:

said lands and grooves extend longitudinally and for substantially an entire axial length of said battery can.

23. The battery can according to claim 21, wherein:

said substantially uniform and continuously repeating pattern on said inner wall is a sinusoidal pattern in cross-section.

24. The battery can according to claim 21, wherein:

said substantially uniform and continuously repeating pattern is one of a rectangular, a trapezoidal and a v-shaped pattern in cross-section.

25. The battery can according to claim 21, wherein:
  - said grooves extend into said wall by an amount approximately equal to 25% of a cross-sectional thickness of said wall.
26. The battery can according to claim 21, wherein:
  - no portion of an axial length of said shell is below approximately 0.004 inches in cross-sectional thickness.
27. The battery can according to claim 23, wherein:
  - a minimum radii of said lands of said sinusoidal pattern is approximately equal to 0.005 inches.
28. A method of forming a battery can with lands and grooves on an inner surface area thereof, said method comprising the steps of:
  - providing a metallic disk;
  - drawing said disk into a substantially prismatic prismatic can workpiece;
  - repeatedly drawing said can workpiece until said can workpiece has a predetermined diameter; and
  - utilizing a shaped punch and an ironing die to define said lands and grooves in said inner surface area of said battery can.
29. The method of forming a battery can according to claim 28, said method further comprising the steps of:
  - utilizing said shaped punch and an ironing die to produce said lands and grooves having a substantially uniform and continuously repeating pattern.
30. The method of forming a battery can according to claim 28, said method further comprising the steps of:

producing said lands and grooves so that they extend longitudinally and for substantially an entire axial length of said battery can.

31. The method of forming a battery can according to claim 28, said method further comprising the steps of:

utilizing said shaped punch and ironing die to define said lands and grooves having a substantially uniform and continuously repeating sinusoidal pattern in cross-section.

32. The method of forming a battery can according to claim 28, said method further comprising the steps of:

utilizing said shaped punch and ironing die to define said lands and grooves having one of a rectangular, a trapezoidal and a v-shaped pattern in cross-section.

33. The method of forming a battery can according to claim 28, said method further comprising the steps of:

extending said lands and grooves into said housing by an amount approximately equal to 25% of a cross-sectional thickness of said housing.

34. The method of forming a battery can according to claim 28, said method further comprising the steps of:

ensuring that no portion of said housing is below approximately 0.004 inches in cross-sectional thickness.

35. The method of forming a battery can according to claim 31, said method further comprising the steps of:

ensuring that a minimum radii of said lands of said sinusoidal pattern is approximately equal to 0.005 inches.

36. The method of forming a battery can according to claim 28, said method

further comprising the steps of:

ironing said lands approximately 20%; and  
ironing said grooves approximately 40%.